Office of the Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington DC 20554
(202) 418-2451

Bruce Perens
Pixar
1001 W. Cutting #200
Richmond CA 94804
Bruce@Pixar.com

Dear Sir or Ms.,

Please distribute this comment on ET Docket No. 96-102. 10 copies are enclosed.

Many Thanks

Bruce Perens

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules	)	ET Docket No. 96-102
to Provide for Unlicensed	)	RM-8648
NII/SUPERNet Operations in the 5 GHz	)	RM-8653
Frequency Range	)	
	)	

From: Bruce Perens
c/o Pixar Animation Studios
1001 W. Cutting #200
Richmond, CA 94804

I prefer that reply comments be served via e-mail, using the address Bruce@Pixar.com .

COMMENT OF BRUCE PERENS

BACKGROUND

I filed a comment in the previous round of RM-8653. I am a Radio Amateur holding station license AB6YM. I am a current user of the 900 MHz Part 15 Internet gateway service provided by Metricom in the San Francisco Bay area. I use Amateur Packet Radio to exchange digital data with Internet users and with other Radio Amateurs.

DISCUSSION

1. I urge the commissioners to separate the proceedings for RM-8648 and RM-8653, as they each propose useful though mutually incompatible services. By combining these proceedings, FCC created an environment in which one proposed service must compete with the other. While it is possible that these services could compete for a frequency allocation, there does not seem to be any other practical reason to consider them together. The proposed SUPERNet devices use very low power, wide bandwidth, and limited range. The wide bandwidth proposed for SUPERNet makes it impractical for higher power long-range use because only a few transmitters could be accommodated over a large area. The proposed NII devices use higher power, medium bandwidth, and have a practical range of several miles. Spectrum sharing between the two classes of devices is impractical, because the high-bandwidth SUPERNet devices will generally be deployed at the same location that is a terminal point for the longer-range NII devices. This would cause interference to the NII devices, which need high receiver sensitivity and a low noise floor to operate over long range at the proposed power levels.

2. The Metricom "Ricochet" network, currently operating in the San Francisco Bay Area in the 900 MHz band under the Part 15 rules, is technically similar to the service proposed by Apple. Metricom's network has been very successful, and this bodes well for the technical success of Apple's proposed Community Networks. The desirability of these networks is discussed in my previous comment to RM-8653.

3. A wide bandwidth building-internal wireless network such as that in the SUPERNet proposal is desirable, but there are technical requirements that such a network must meet in order to avoid impairing other users of the same band. Primarily, the service must be designed to "stay indoors", with

a low probability of interference to users more than 100 feet outside the buildings in which it is deployed. If this constraint can be implemented, it is practical for SUPERNet to share spectrum with another service, as long as that service is not typically deployed in the same location as SUPERNet. This might allow services such as the Microwave Landing System or Amateur Radio to share spectrum with SUPERNet. It would exclude the possibility of NII and SUPERNet systems devices both sharing the same spectrum, because both classes of devices would typically operate from the same location.

4. As Radio Amateurs expand their use of the frequency bands allocated to them, it is likely that they will make more use of their 5 GHz allocation for medium-distance data networking. There is an active group of Radio Amateurs in the San Francisco Bay area who have operated a voice and data network on 5 GHz for well over a decade, and such use can only expand as the Amateur population is increasing at a healthy rate and more Amateurs are experimenting in digital networking The social and technical contributions of Amateur Radio have been well-documented, and support continued use of the 5.650-5.975 GHz band by Radio Amateurs with undiminished priority. It is possible that Amateurs could share with properly-restricted SUPERNet networks with a minimum of interference to either party, since these devices will most likely not be operated in the same locations. Because of their higher power and longer range, The Community Networks of NII band devices proposed by Apple could probably not effectively share spectrum with Amateur Radio, and should be allocated the portions of the 5 GHz spectrum that are currently not authorized for Radio Amateurs.

5. Many services have proposed to reallocate frequency bands presently allocated to the Amateur Service over the last decade, and some have succeeded in reallocating spectrum or imposing sharing rules that can only work to the detriment of the Amateur Service. The need for Amaterur Radio in community service, education, and technical development will only increase, and thus FCC should not deprive that service of room to grow. Other services tend to view the Amateur spectrum as a mine of frequencies ready to be exploited. Such behavior must be reversed. FCC could help by removing restrictions designed for another generation that hobble Amateur Radio today. For example, there can be no sensible reason today to require Amateurs of any license class to demonstrate a facility in the code required to operate a telegraph system nearly 100 years ago. However, FCC still mandates that all but the lowest license class of Radio Amateurs be proficient in the Morse Code.

6. In summary, I urge FCC to assure that the technical design of SUPERNet devices confines their signal to the building in which they are used. Only if this technical constraint is met can SUPERNet devices effectively share spectrum with Amateur Radio. I urge FCC to authorize NII Band devices as proposed by Apple in the portions of the 5 GHz spectrum that are not currently authorized for Radio Amateurs. I urge FCC to reverse the trend of considering Amateur frequencies as a spectrum warehouse, and to eliminate obsolete regulations that have hobbled the Amateur service such as the Morse Code requirement.

* * *